Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently amended): A system for storing and retrieving elemental hydrogen, said system comprising a hydrogen storage member comprising a block of porous silicon having interior surfaces adapted to adsorb and store hydrogen.

Claim 2 (Currently amended): A system in accordance with claim 1 wherein the ~~hydrogen storage member includes~~ said interior surfaces of said porous silicon have dendritic spikes or etched pits.

Claim 3 (Currently amended): A system in accordance with claim 1 further comprising: a) a housing for enclosing said hydrogen storage member; and, b) a control system for regulating storage ~~said storing~~ of hydrogen into and ~~said~~ retrieval of hydrogen from said storage member.

Claim 4 (Original): A system in accordance with claim 1 comprising a plurality of said hydrogen storage members.

Claim 5 (Currently amended): A system in accordance with claim 1 wherein said ~~hydrogen storage member includes a~~ porous silicon defines a surface layer over at least a first surface portion of said hydrogen storage member.

Claim 6 (Original): A system in accordance with claim 5 wherein the percent void volume of said surface layer is about 50%.

Claim 7 (Currently amended): A system in accordance with claim 5 further comprising electronic integrated circuits on ~~wherein~~ a second surface portion of said hydrogen storage member. ~~member includes electronic integrated circuit elements.~~

Claim 8 (Currently amended): A system for storing and retrieving elemental hydrogen, said system comprising:

a hydrogen storage member comprising a porous mesh of ~~in~~

~~accordance with claim 1 wherein said hydrogen storage member includes~~ silicon columns having surfaces adapted to adsorb and store hydrogen; and

means for releasing stored hydrogen from said silicon columns.

Claim 9 (Currently amended): A system in accordance with claim 8 wherein said silicon columns have an aspect ratio of length to diameter of at least 10.

Claim 10 (Currently amended): A system in accordance with claim 8 wherein said silicon columns are ~~have been~~ formed by extrusion of molten silicon to have surfaces on the (111) plane. ~~through an orifice.~~

Claim 11 (Currently amended): A system in accordance with claim 10 wherein said silicon columns are extruded through at least one aperture that is an integral multiple of the lattice spacing of silicon such that said silicon columns have a minimum energy configuration suitable for forming a crystal. ~~extrusion is carried out by at least one of pressure, gravity, centrifugal force, and combinations thereof.~~

Claim 12 (Currently amended): A system in accordance with claim 8 wherein said silicon columns have diameters ~~10 wherein said orifice has a diameter~~ of about 1 nm.

Claim 13 (Currently amended): A system in accordance with claim 12 wherein said silicon columns have cross-sectional shapes ~~orifice is formed in a shape~~ selected from the group consisting of triangle, rhombus, square, and circle.

Claim 14 (Currently amended): A system in accordance with claim 10 wherein said silicon columns have roughened surfaces. ~~extrusion is carried out in an atmosphere containing gases selected from the group consisting of hydrogen, argon, helium, and neon.~~

Claim 15 (Currently amended): A system in accordance with claim 1 further comprising means ~~a releasing source~~ for releasing said stored hydrogen from said member.

Claim 16 (Currently amended): A system in accordance with claim

15 wherein said releasing ~~source~~ means ~~for releasing~~ is selected from the group consisting of light sources, current sources, voltage sources, and combinations thereof.

Claim 17 (Currently amended): A system in accordance with claim 15 ~~16~~ wherein said releasing means comprises ~~light is provided by~~ a light-emitting diode.

Claim 18 (Currently amended): A system in accordance with claim 15 ~~16~~ wherein said releasing means comprises a light source that emits photon energy ~~light is provided~~ at a wavelength of about 660 nanometers.

Claim 19 (Currently amended): A system in accordance with claim 1 wherein said porous silicon is in a monocrystalline form.

Claim 20 (Currently amended): A system in accordance with claim 19 wherein said porous silicon is ~~hydrogen storage member is formed from~~ a silicon wafer.

Claim 21 (Currently amended): A system in accordance with claim 1 wherein said porous silicon is in a polycrystalline form.

Claim 22 (Currently amended): A system in accordance with claim 1 wherein said porous silicon has been treated by a process selected from the group consisting of crushing, milling, treatment with hydrofluoric acid and methanol in the presence of electric current, treatment with potassium hydroxide, treatment with hydrazine, wet etching, dry etching, electrodeposition of a noble metal such as palladium or platinum, conformal vapor deposition of silicon, and non-conformal vapor deposition of silicon.

Claim 23 (Currently amended): A system in accordance with claim 1 wherein said porous silicon is derived from molten silicon by crystallization.

Claim 24 (Currently amended): A system in accordance with claim 1 wherein said porous silicon is derived from silicon waste obtained from a silicon process waste stream. ~~the integrated circuit industry.~~

Claims 25-37 (Canceled)